

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A manufacturing method of a hydroxyapatite complex including a hydroxyapatite sintered compact and a polymer-based material, comprising the step of:

a) reacting the hydroxyapatite sintered compact with an alkoxysilyl group of the polymer-based material, so as to chemically bond the hydroxyapatite sintered compact and the polymer-based material.

2. (Previously Presented) A manufacturing method of a hydroxyapatite complex including a hydroxyapatite sintered compact and a polymer-based material, comprising the steps of:

a) introducing an alkoxysilyl group into the polymer-based material; and

b) reacting the hydroxyapatite sintered compact with the alkoxysilyl group of the polymer-based material so as to chemically bond the hydroxyapatite sintered compact with the polymer-based material.

3. (Previously Presented) The manufacturing method of a hydroxyapatite complex as set forth in claim 2, wherein:

the step (a) is performed using a compound, that contains a reactive functional group and an alkoxysilyl group, so as to react the reactive functional group with the polymer-based material.

4. (Original) The manufacturing method of a hydroxyapatite complex as set forth in claim 3, wherein:

the compound is a silane coupling agent.

5. (Previously Presented) The manufacturing method of a hydroxyapatite complex as set forth in claim 2, further comprising the step of:

c) introducing an active group into the polymer-based material before the step (a),

wherein:

the step (a) is performed using a compound, that contains a reactive functional group and at least one functional group and an alkoxysilyl group, so as to react the reactive functional group with the active group of the polymer-based material.

6. (Original) The manufacturing method of a hydroxyapatite complex as set forth in claim 5, wherein:

the compound is a silane coupling agent.

7. (Original) The manufacturing method of a hydroxyapatite complex as set forth in claim 1, wherein:

the polymer-based material is a medical polymeric material.

8. (Original) The manufacturing method of a hydroxyapatite complex as set forth in claim 7, wherein:

the medical polymeric material is a silk fibroin.

9. (Previously Presented) A hydroxyapatite complex in which a hydroxyapatite sintered compact and a polymer-based material containing an alkoxysilyl group are chemically bonded, wherein:

the hydroxyapatite sintered compact is chemically bonded directly to the alkoxysilyl group of the polymer-based material.

10. (Cancelled)

11. (Previously Presented) A medical material made of a hydroxyapatite complex in which a hydroxyapatite sintered compact and a polymer-based material containing an alkoxysilyl group are chemically bonded, wherein:

the hydroxyapatite sintered compact is chemically bonded directly to the alkoxysilyl group of the polymer-based material.

12. (Cancelled)

13. (Previously Presented) A percutaneous trans-catheter made of the medical material as set forth in claim 20.

14. (Previously Presented) The percutaneous trans-catheter as set forth in claim 13, wherein:

the hydroxyapatite sintered compact is formed as a layer with a thickness ranging from 0.0001% to 100% with respect to an entire thickness of the polymer-based material.

15. (Previously Presented) A percutaneous terminal made of the medical material as set forth in claim 20.

16. (Previously Presented) An artificial blood vessel made of the medical material as set forth in claim 20.

17. (Previously Presented) An artificial organ made of the medical material as set forth in claim 20.

18. (Previously Presented) A manufacturing method of a hydroxyapatite complex comprising a hydroxyapatite sintered compact and a polymer-based material, comprising the step of:

reacting the hydroxyapatite sintered compact with an isocyanate group of silk fibroin, so as to form a chemical bond.

19. (Previously Presented) A hydroxyapatite complex in which a hydroxyl group of a hydroxyapatite sintered compact and an alkoxysilyl group of a polymer-based material containing the alkoxysilyl group are chemically bonded,

wherein:

the hydroxyapatite complex comprises the following structure:

where X expresses the polymer-based material, and Y expresses the hydroxyapatite sintered compact.

20. (Previously Presented) A medical material made of a hydroxyapatite complex in which a hydroxyl group of a hydroxyapatite sintered compact and an alkoxysilyl group of a polymer-based material containing the alkoxysilyl group are chemically bonded,

wherein:

the hydroxyapatite complex comprises the following structure:

where X expresses the polymer-based material, and Y expresses the hydroxyapatite sintered compact.